Janet Napolitano
Governor

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

1110 West Washington Street • Phoenix, Arizona 85007
(602) 771-2300 • www.adeq.state.az.us

Stephen A. Owens
Director

19TH AVENUE LANDFILL

EXPLANATION OF SIGNIFICANT DIFFERENCES

September 2003

Northern Regional Office
1515 East Cedar Avenue • Suite F • Flagstaff, AZ 86004
(928) 779-0313

Southern Regional Office
400 West Congress Street • Suite 433 • Tucson, AZ 85701
(520) 628-6733

EXPLANATION OF SIGNIFICANT DIFFERENCES
19th Avenue Landfill
Phoenix, Arizona

September 2003

I. INTRODUCTION

On September 21, 1989, the State of Arizona's Department of Environmental Quality (ADEQ) signed a Letter of Determination (LOD) for the final remedy at the 19th Avenue Landfill site in Phoenix, Arizona. The United States Environmental Protection Agency (EPA) concurred with the remedy selected in the 1989 LOD through the issuance of a Record of Decision (ROD) on September 29, 1989. The ADEQ, by this document, is modifying the LOD/ROD to explain differences made to the established remedy.

Under Section 117 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendment and Reauthorization Act of 1986 (SARA), and pursuant to 40 C.F.R. Section 300.435(c) (2) (i) (55 Fed. Reg. 8666, 8852 (March 8, 1990)), the ADEQ is required, as the lead agency, to publish an Explanation of Significant Difference (ESD) when significant changes are being considered, or have been implemented to a final remedial action plan as described in a ROD. If the changes fundamentally alter the nature of the selected remedy, an amendment to the ROD would be required [40 C.F.R. Section 300.435(c) (2) (ii)]. In this instance, significant changes have been made that modify the LOD/ROD requirements, but do not alter the hazardous waste management approach that the ADEQ and the EPA selected in the LOD and ROD respectively. Therefore, this ESD has been prepared to document these significant changes instead of a ROD amendment. The purposes of these changes are described in detail in Section III of this document.

This ESD modifies the 1989 remedy by updating the maximum contaminant levels (MCLs) for specific constituents in groundwater, and adding the Arizona Ambient Air Quality Guidelines for volatile organic compounds (VOCs) as performance standards for ambient air quality monitoring at the site, should ambient air quality monitoring be necessary in the future. Under this document, these standards will be incorporated into the prescribed remedy goals to measure protectiveness of the site. This ESD and supporting documentation will become part of the 19th Avenue Landfill Administrative Record. Copies of the Administrative Record for the 19th Avenue Landfill site, including this ESD, will be placed at the following locations:

City of Phoenix Public Library
1221 N. Central Avenue
Phoenix, Arizona 85012

and

The Arizona Department of Environmental Quality
1110 W. Washington Avenue
Phoenix, Arizona 85007

The ADEQ has provided a fifteen (15) working-day comment period to the EPA in accordance with 40 C.F.R. Section 300.515 (h)(3). The EPA comments on this ESD are summarized in Section IV of this document, and included in the 19th Avenue Landfill Administrative Record file. Pursuant to 40 C.F.R. Section 300.435 (c)(2)(i), a formal public comment period is not required for this ESD.

II. BACKGROUND

The following provides a brief background of the 19th Avenue Landfill site, and a short summary of the original 1989 LOD/ROD. Additional background information can be found in the 1989 LOD/ROD and in the 19th Avenue Landfill Administrative Record.

A. Site Description

The 19th Avenue Landfill is located in an industrial area of Maricopa County, within the municipal boundaries of Phoenix, Arizona. The landfill covers 213 acres. The major part of the landfill, which covers approximately 200 acres and is referred to as Cell A, is located on the north side of the Salt River channel. This cell is bounded on the north by Lower Buckeye Road, on the east by the 15th Avenue storm drain outfall, on the west by 19th Avenue, and on the south by the river channel. The remainder of the landfill, Cell A-1, is bounded on the north by the Salt River channel, on the east by an active sand and gravel pit, on the south by industrial property, and on the west by an inactive sand and gravel pit. The Salt River bed adjacent to the landfill is normally dry. The site is located on alluvial fill and lies within the Basin and Range physiographic province. Groundwater flow direction is generally to the northwest.

B. Site History

In 1955, the 19th Avenue Landfill site was relatively undisturbed except for a shallow 20-acre excavation in the northwestern portion of Cell A. In 1957, the City of Phoenix ("the City") extended an existing lease with the landowner to operate a municipal landfill. Sand and gravel pits were excavated to a depth of approximately 30 to 50 feet, and backfilled predominately with municipal refuse from the Phoenix area, and some solid and liquid industrial wastes.

Liquid industrial wastes were poured into unlined pits that were dug into areas of Cell A, previously filled with refuse. In addition to the municipal and industrial wastes, some medical wastes and materials containing low levels of radioactivity were deposited. It has been estimated that the Cell A landfill contained approximately nine million cubic yards of refuse. Cell A-1 was mined for sand and gravel prior to 1971, and completely filled with refuse by late 1972. Cell A-1 contained the same type of

municipal refuse as in Cell A, and no evidence of liquid or solid special or hazardous types of materials were found. It has been estimated that the Cell A-1 landfill contains approximately one-half million cubic yards of refuse.

Parts of the landfill were covered with water by at least one flood event during 1965 and intermittently during the 1970's. Surface water runoff events in May 1978 washed refuse from the southwest part of Cell A and the northern third of Cell A-1. These were refilled; Cell A with refuse during the summer of 1978, and Cell A-1 with construction debris in 1979. River flows in the winter and spring of 1979 again washed out refuse in the southwestern part of Cell A. The next few years following the river flows, the area was covered with rubble, asphalt and dirt to prevent additional erosion.

The landfill was closed under a cease and desist order issued by the Arizona Department of Health Services (ADHS) in February 1979. The City and ADHS entered into a consent agreement in June 1979. The Consent Order was amended in December 1979. To comply with the first amended consent order, the City covered the site with fill material, stockpiled soil for final capping, installed groundwater monitor wells, built berms around the boundary of the landfill, installed a methane gas collection system and provided a 24-hour security guard until November 30, 1996. The guard was no longer required once the site was secured by a permanent fence with secured access points.

The landfill was placed on the EPA's National Priorities List (NPL) in September 1983. A Remedial Investigation/Feasibility Study (RI/FS) was voluntarily conducted by the City. The RI/FS was prepared according to the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The RI/FS was submitted to the ADEQ on June 9, 1988, and reviewed by the ADEQ, EPA and the Arizona Department of Water Resources (ADWR). Comments by these agencies were incorporated in the subsequent Remedial Action Plan (RAP).

In 1988, the EPA assigned the lead oversight responsibility for the site to the ADEQ. Since the ADEQ became the lead agency, the City was required to prepare a RAP under the state Water Quality Assurance Revolving Fund (WQARF) rules. The RAP included options, ranging from excavation of the entire landfill to a no action option. These options were categorized into the four objectives for the 19th Avenue Landfill; *Refuse-Washout, Surface-Water Quality, Ground-Water Quality, and Landfill-Gas Accumulation.* Four options were developed for the Refuse-Washout objective, two for Surface-Water Quality, two for Ground-Water Quality, and one for Landfill-Gas Accumulation. The options surviving the screening in the feasibility study were assembled into four remedial alternatives that addressed all objectives for the 19th Avenue Landfill.

The ADEQ approved the final draft RAP along with the RI/FS for the 19th Avenue Landfill in a Letter of Determination (LOD) dated September 21, 1989. The LOD recorded approval of the preferred alternative A, with inclusion of a groundwater contingency plan (Appendix B of the RAP). The Record of Decision (ROD) issued by the EPA was dated September 29, 1989. This document served as the EPA's concurrence of the remedy selected by the ADEQ for the 19th Avenue Landfill. The selected remedy was Alternative A in the RAP, as described in the LOD and the ROD.

A Consent Decree between the State of Arizona and the City of Phoenix was signed by the United States District Court on June 18, 1992. The Consent Decree specified the capping of the landfill cells, removal and treatment of methane gas, monitoring of groundwater, flood control improvements and bank stabilization, and a contingency plan to treat groundwater if standards are exceeded. The Consent Decree provided legal assurance to the public that the approved remedy would be implemented as described in the LOD and the ROD.

Remedy construction was completed in late 1996, and the COP, EPA and ADEQ representatives conducted a final inspection on February 25, 1997. They determined that the contractors had constructed the landfill cap in accordance with remedial design plans and specifications. ADEQ prepared the Preliminary Close-out Report (PCOR) in January 1998. The report attests to the fact that the final remedy was well constructed, and protective of human health and the environment. The PCOR noted that no future end use plans for the site were being considered, and that the site will not be used for any purpose inconsistent with the protection of public health and the environment. Public access to the site will be prohibited by a perimeter security fence. Any future end use plans for the site would require review and approval by the ADEQ to ensure that these requirements are maintained.

The first 5-Year Review of this site was conducted in September 2000, and led to the identification of the need to update new Applicable or Relevant and Appropriate Requirements (ARARs) for groundwater and air quality. Other issues were related to the quarterly groundwater monitoring, monthly methane monitoring, and inspections of the landfill cap, flood control structures and landscaping. A final engineering design of a system to enhance gas collection was approved by ADEQ during 2001, and construction was completed during May 2002. The initial performance test was made, and Maricopa County gave the City an Air Quality permit to operate the system during the fall of 2002.

III. DESCRIPTION OF SIGNIFICANT DIFFERENCES

ADEQ has determined that the currently-established groundwater ARARs for the site as addressed in the 1989 LOD/ROD and ADEQ's 1992 Consent Decree are no longer the most protective of human health and the environment, and therefore require modifications. This ESD modifies the existing remedy by updating the maximum contaminant levels (MCLs) for specific constituents in groundwater to reflect EPA changes in those standards, and to add the recently promulgated Arizona Ambient Air Quality Guidelines for volatile organic compounds (VOCs) as performance standards for air quality monitoring at the site.

A. Groundwater Quality Standards

The current chemical-specific ARARs list identified specific compounds with corresponding water quality standards that were based on sets of standards established by the Safe Drinking Water Act Maximum Contaminant Levels (MCLs), the Safe Drinking Water Act Proposed MCLs and the Arizona Health-based Guidance Levels for Contaminants in Drinking Water and Soil (1990). Since 1989 when the ROD was implemented, there have been significant changes in the groundwater quality

standards which warrant a re-evaluation of the protectiveness of the remedy for certain compounds incorporated in the Consent Decree.

The currently applicable groundwater protection standards in Arizona are derived from ADEQ's Aquifer Water Quality Standards (A.A..C. Title 18, Chapter 11, Article 4) which established statewide numeric standards for drinking-water protective use. These standards become the applicable ARARs for this site. Other current numeric standards that are relevant and appropriate are the existing MCLs and the revised primary drinking standards (MCLs) in 40 C.F.R. Part 141, Subparts B and G, and the ADEQ's Health-based Guidance Levels (HBGLs) (1992).

This ESD incorporates the chemical-specific ARARs and groundwater quality standards for those compounds that did not have established standards, or the applicable standards have changed since the Consent Decree was issued in 1989. The following elements or compounds are affected by the changes in accordance with current numeric standards identified as new ARARs (Table 1).

Table 1: List of Applicable Groundwater Quality Standards

Compound	Original Standards	Revised Standards
Toluene	2000 ug/L	1000ug/L (AWQS & MCL)
Naphthalene	None Established	28 ug/L (HBGL)
Pentachlorophenol	None Established	1 ug/L (MCL)
Barium	5000 ug/L	2000 ug/L (AWQS & MCL)
Beryllium	5 ug/L	4 ug/L (AWQS & MCL)
Arsenic	50 ug/L	10 ug/L (MCL)*
Antimony	50 ug/L	6 ug/L (AWQS & MCL)
Thallium	5 ug/L	2 ug/L (Revised MCL)
Nickel	50 ug/L	100 ug/L (Revised MCL)

* On January 21, 2002, EPA lowered the MCL for arsenic from 50 ug/L to 10ug/L. February 22, 2002 was the effective date for this rule with January 23, 2006 as the compliance date for water purveyors. The MCL was effective the day it was adopted, and the 10ug/L is the number that the Superfund program is using for decision making. The Agency is giving public water systems a grace period (until January 2006) to comply.

Groundwater monitoring data indicate that the contaminant levels at the landfill are all below these new standards, with the exception of arsenic, which is above the new MCL in a few landfill boundary wells (Wells I-3 and I-4). However, arsenic is not above the MCL off-site, nor does it appear to be migrating off-site. The compliance point for groundwater contamination in the ROD and Consent Decree is considered the landfill facility boundary. Therefore, as long as the levels of arsenic are contained or otherwise controlled within the landfill boundary, the landfill is considered protective of

human health and the environment. It should also be noted that napthalene and pentachlorophenol, while not detected during the 5-Year Review process, are not part of the current monitoring program. The need for a monitoring program for these constituents should be evaluated in the future.

B. Ambient Air Quality Standards

The Remedial Action Plan (RAP) for this site identified ARARs for landfill cap emissions, and recommended the development and implementation of a methane and ambient air quality monitoring program at the completion of remedial actions to ensure compliance with these ARARs. The ARARs were to be established for Methane and Non Methane Organic Compounds (NMOCs). The RAP proposed the RCRA Proposed Rule as the basis for an appropriate standard for methane emission, and identified EPA's ambient air quality standards as usable for NMOCs.

However, during signing of the ROD, no ambient-air protective ARARs were available for the landfill VOC emissions, because the EPA did not develop standards for constituents (VOCs) directly applicable to the site. Consequently, no protective ARARs exist for establishing safe air quality levels for VOCs above the landfill. Although the Maricopa County Environmental Services Department (MCESD) and ADEQ have developed final rules regarding ambient air quality standards for landfill emissions (Rule 510 for MCESD and A.A..C. Title 18, Chapter 2, Article 2 for ADEQ), these standards do not include VOCs. The Arizona Ambient Air Quality Guidelines (AAAQG) developed by the Arizona Department of Health Services for ADEQ in 1991 and last updated in 1999, established threshold concentrations for compounds in air, including VOCs. These threshold values are presented as 1-hour, 24-hour, or annual averages for a given compound (Appendix A). This ESD incorporates the AAAQG as performance standards for the site as established in the RAP. These guidelines were considered by ADEQ and EPA to evaluate ambient air monitoring conducted at the landfill in 1999 - 2000 and continuing protectiveness of the landfill cap, and should be considered if ambient air quality monitoring becomes necessary in the future. So far EPA and ADEQ have determined that the ambient air monitoring program has provided the information necessary to support the conclusion that the landfill remedy is currently protective of ambient air quality.

IV. SUPPORT AGENCY COMMENTS

The EPA concurred with the proposed ESD with minor comments in a memo dated April 5, 2003. The EPA comments included the suggestion to condense the site history as written, and add more recent site activities. The EPA also noted that the ESD is not making "proposed" changes in standards because the ESD is the actual (final) decision document. These revisions were incorporated in this ESD.

V. STATUTORY DETERMINATIONS

Considering the new information that has been developed, this ESD modifies the selected remedy by updating maximum contaminant levels (MCLs) for specific constituents in groundwater and adding the Arizona Ambient Air Quality Guidelines for volatile organic compounds (VOCs) as performance standards for the site. ADEQ believes that by these changes, the selected remedy for the 19th Avenue

Landfill site will remain protective of human health and the environment, and will continue to comply with federal and state requirements that are applicable or relevant and appropriate to this remedial action, and will continue to be cost-effective. The modified remedy satisfies CERCLA Section 121.

VI. PUBLIC PARTICIPATION ACTIVITIES

ADEQ has presented these changes to the remedy in the form of an ESD because the changes are of a significant but not fundamental nature. No public notice or comment period is required for this ESD because the changes are not fundamentally altering the selected remedy. ADEQ has provided EPA with a fifteen (15) working-day comment period on this ESD. In accordance with 40 C.F.R. Section 300.435(c) (2) (ii), this final ESD and all documents will be contained in the Administrative Record for the 19th Avenue Landfill site.

Approved By:

Philip A. McNeely, Manager — Date: 10-6-03
Superfund Programs Section
Waste Programs Division
Arizona Department of Environmental Quality

Approved By:

Joel Jones, Acting Chief — Date: 10-16-03
Federal Facilities and Site Cleanup Branch
Superfund Division
U.S. EPA Region IX

1999 Update
Arizona Ambient Air Quality Guidelines (AAAQGs)

Prepared by

The Office of Environmental Health

Prepared for

The Arizona Department of Environmental Quality
Air Programs Division

May 11, 1999

1.0 INTRODUCTION

The Arizona Department of Health Services (ADHS) began developing health-based guidelines for contaminants in air for the Arizona Department of Environmental Quality (ADEQ) shortly after the ADEQ was formed in July of 1987. The ADHS added chemicals to the list and updated Arizona Ambient Air Quality Guidelines (AAAQGs) for the ADEQ over the next several years. A comprehensive list of AAAQGs was compiled in 1992. The ADEQ and various counties in Arizona have been using the 1992 list of AAAQGs as health-based reference values for making risk management decisions in their environmental programs.

This document updates the 1992 AAAQGs list, incorporating more recent toxicological data and occupational standards. The methods, equations, and assumptions used to develop this updated list are identical to those historically used to develop AAAQGs.

AAAQGs are residential screening values that are protective of human health, including children. Chemical concentrations in air that exceed AAAQGs may not necessarily represent a health risk. Rather, when contaminant concentrations exceed these guidelines, further evaluation may be necessary to determine whether there is a true threat to human health.

AAAQGs are not intended to be used as standards. Rather, they are intended to provide health-based guidelines that may be useful in making environmental risk management decisions. AAAQGs consider human health risk from inhalation of contaminants in ambient air. They do not take into account odor thresholds or threats to wildlife.

2.0 METHODOLOGY

2.1 Overview

AAAQGs are calculated using a human health-based approach developed by the ADHS. One-hour and 24-hour AAAQGs use occupational exposure limits established or recommended by the United States Occupational Safety and Health Administration (OSHA), the National Institute of Occupational Safety and Health (NIOSH), the National Institute for Environmental Health Sciences (NIEHS). Annual AAAQGs use cancer slope factors (SF) from the United States Environmental Protection Agency (USEPA). The most protective occupational standards or recommended levels from the United States (US) were used when a standard or recommendation existed. When no US standard or recommendation was found, the most protective standard or recommendation from Western Europe or Japan was used. If standards or recommendations were lacking from those sources, values from Eastern Europe, the former Soviet Union or South America were used. In the cases where no data could be located, the AAAQG value was left blank.

The methodology used to calculate Annual, 24-Hour, and One-Hour AQGs are

discussed in Sections 2.2 through 2.4.

2.2 Annual AQGs

Annual AQGs are calculated for possible, probable and known human carcinogens. They protect against toxic doses of systemic toxicants, and limit excess lifetime cancer risk to one-in-one million (10^{-6}) for known human carcinogens. The guidelines use standard USEPA residential exposure assumptions. They assume that constant exposure occurs over a lifetime (70 years). The default exposure factors were obtained primarily from *Risk Assessment Guidance for Superfund (RAGS), Supplemental Guidance Standard Default Exposure Factors* (OSWER Directive, 9285.6-03) dated March 25, 1991.

Annual AQGs assume an exposure frequency of 365 days/year for 70 years. Exposure doses are averaged over a lifetime (70 years) for carcinogens. They use USEPA carcinogenic slope factors from the USEPA Integrated Risk Information System (IRIS) through January 1999, USEPA Health Effects Assessment Summary Tables (HEAST) through 1998, and the USEPA National Center for Environmental Assessment (NCEA). The priority among sources of toxicological values used is as follows: (1) IRIS, (2) HEAST, (3) NCEA, and (4) withdrawn values from IRIS or HEAST and values under review. Oral cancer slope reference doses and cancer slope were used when no toxicity values were available for inhalation exposure.

The target excess lifetime cancer risk is one-in-one-million (1E-6). Equation 1 displays the formula and assumptions used to calculate Annual AQGs. Annual AQGs are not developed for those substances on the list that are not suspected of causing cancer.

2.3 Twenty-four-hour AAAQGs

Twenty-four-hour AAAQGs are developed using a methodology that uses occupational exposure limits and appropriate conversion safety factors. Twenty-four-hour AAAQGs also protect against excessive exposure to possible, probable, and known human carcinogens.

Twenty-four-hour AAAQGs were developed by dividing the most recent and lowest 8-hour OSHA Time Weighted Average (TWA) or other occupational exposure limit or recommendation by 126. The divisor of 126 is a factor which incorporates the conversion of an 8-hour, 5 day work week to a 24-hour, 7 day week of 4.2, and a safety factor of 30 to protect the most sensitive members of the population such as children and the elderly. Equation 2 displays the formula for calculating 24-hour AQGs based upon systemic toxicity.

Twenty-four-hour AAAQGs for probable and known human carcinogens were developed by taking the more protective value of the 24-hour AAAQG based upon systemic toxicity, or 365 times the Annual AAAQG, which is based on a one-in-a-million excess lifetime cancer risk. Equation 3 displays the formula for calculating the 24-hour AAAQG for carcinogens.

2.4 One-hour AAAQGs

One-hour AAAQGs are calculated by taking the more protective of the Short Term Exposure Limit (STEL) or other short term standard or guideline divided by 120, or the 24-Hour AQG multiplied by 3.8. The divisor for calculating a 1-Hour AQG using a STEL represents a conversion factor that converts a 15 minute exposure into a one-hour exposure, and a safety factor of 30 to protect the most sensitive members of the population such as children and the elderly.

The multiplier of 3.8, which is used in the calculation of a 1-hour AAAQG based upon the 24-hour AQG, represents the proportional difference in the lowest observed adverse effect level for 24-hour and 1-hour exposure to a common irritant (SO_2) in human subjects.

3.0 SUMMARY

The ADHS began developing health-based guidelines for contaminants in air for the ADEQ shortly after the ADEQ was formed in July of 1987. The ADHS added chemicals to the list and updated AAAQGs for the ADEQ over the next several years. The most recent comprehensive list of AAAQGs was developed in 1992. The ADEQ and various counties in Arizona have been using the 1992 list of AAAQGs as health-based reference values for making risk management decisions in their environmental programs.

This document updates the 1992 AAAQGs list, incorporating more recent toxicological data and occupational standards. The methods, equations, and assumptions used to develop this updated list are identical to those historically used to develop AAAQGs.

AAAQGs are protective of human health, including children. Chemical concentrations in air that exceed AAAQGs may not necessarily represent a health risk. Rather, when contaminant concentrations exceed these guidelines, further evaluation may be necessary to determine whether there is a true threat to human health. AAAQGs consider human health risk from inhalation of contaminants in ambient air; they do not take into account odor thresholds or threats to wildlife.

These guidelines were calculated using a human health-based approach developed by the ADHS. One-hour and 24-hour AAAQGs are calculated using occupational exposure limits established or recommended by the United States Occupational Safety and Health Administration (OSHA), the National Institute of Occupational Safety and Health (NIOSH), the National Institute for Environmental Health Sciences. Annual AAAQGs use toxicity information from the United States Environmental Protection Agency.

They protect against toxic doses of systemic toxicants, and limit excess lifetime cancer risk to one-in-one million (10^{-6}) for known human carcinogens.

Equations 1 through 3 display the formulas and assumptions used to calculate AAAQGs. Table 1 displays the 1999 updated AAAQGs.

Equations

Equation 1: Equation for Calculating Annual AAAQGs

Install Equation Editor and double-click here to view equation.

Equation 2: Equations for Calculating 24 Hour AAAQGs

The 24-Hour AAAQG is the lesser of the result of Equation 2A and 2B:

Equation 2A:
Equation 2B:

Install Equation Editor and double-click here to view equation.

Equation 3: Equations for Calculating 1 Hour AAAQGs

Install Equation Editor and double-click here to view equation.

The 1-Hour AAAQG is the lesser of the result of Equation 3A and 3B:

Equation 3A:

Equation 3B:

Install Equation Editor and double-click here to view equation.

Install Equation Editor and double-click here to view equation.

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	Chemical Name	CAS#	1 Hour AAAQG µg/m^3	24 Hour AAAQG µg/m^3	Annual AAAQG µg/m^3
	Chemical Name	**CAS#**	**1 Hour AAAQG µg/m^3**	**24 Hour AAAQG µg/m^3**	**Annual AAAQG µg/m^3**
1	Acetaldehyde	75-07-0	6.3E+02	1.7E+02	4.5E-01
2	Acetic Acid	64-19-7	3.1E+02	2.0E+02	
3	Acetone	67-64-1	2.0E+04	1.4E+04	
4	Acetonitrile	75-05-8	8.8E+02	5.6E+02	
5	Acetophenone	98-86-2	1.5E+02	4.0E+01	
6	Acetyl Acetone	123-54-6			
7	Acrolein	107-02-8	6.3E+00	2.0E+00	
8	Acrylamide	79-06-1	1.1E+00	2.8E-01	7.6E-04
9	Acrylic Acid (mac)	79-10-7	1.8E+02	4.8E+01	
10	Acrylonitrile	107-13-1	2.0E+01	5.3E+00	1.5E-02
11	Aldrin	309-00-2	2.9E-01	7.5E-02	2.1E-04
12	Aliphatic Naphtha	8030-30-6	1.2E+04	3.2E+03	
13	Allyl Alcohol	107-18-6	8.3E+01	4.0E+01	
14	Aluminum - Total Dust	7429-90-5	4.5E+02	1.2E+02	
15	Aluminum - Respirable Dust	7429-90-5	1.5E+02	4.0E+01	
16	Aluminum - Pyro Powders	7429-90-5	1.5E+02	4.0E+01	
17	Aluminum - Welding Fumes	7429-90-5	1.5E+02	4.0E+01	
18	Aluminum - Soluble Salts	7429-90-5	6.0E+01	1.6E+01	
19	Aluminum Nitride				
20	Aluminum Oxide - Respirable	1344-28-1	1.8E+02	4.8E+01	
21	Ammonia	7664-41-7	2.3E+02	1.4E+02	
22	Ammonium Nitrate				
23	Aniline	62-53-3	3.0E+02	7.9E+01	6.1E-01
24	Antimony	7440-36-0	1.5E+01	4.0E+00	
25	Arsenic	7440-38-0	6.0E-02	1.6E-02	2.3E-04

	Chemical Name	CAS#	1 Hour AAAQG µg/m^3	24 Hour AAAQG µg/m^3	Annual AAAQG µg/m^3
26	Arsenic Pentoxide	1303-28-2	6.0E-02	1.6E-02	2.3E-04
27	Arsenic Trioxide (Arsenous Oxide)	1327-53-3	6.0E-02	1.6E-02	2.3E-04
28	Arsine	7784-42-1	6.0E-02	1.6E-02	2.3E-04
29	Azinphos (Ethyl Guthion)	2642-71-9	5.0E+00	1.6E+00	
30	Barium	7440-39-3	1.5E+01	4.0E+00	
31	Barium Oxide	1304-28-5	1.5E+01	4.0E+00	
32	Barium Sulfate (Total Dust)	7727-43-7	3.0E+02	7.9E+01	
33	Barium Sulfate (Respirable Fraction)	7727-43-7	1.5E+02	4.0E+01	
34	Benzaldehyde	100-52-7	8.3E+01	4.0E+01	
35	Benzene	71-43-2	1.7E+02	4.4E+01	1.2E-01
36	Benzidine	92-87-5	2.1E-02	5.6E-03	1.5E-05
37	Benz(a)anthracene	56-55-3	6.0E+00	1.6E+00	4.8E-03
38	Benzo(a)Pyrene	50-32-8	6.7E-01	1.8E-01	4.8E-04
39	Benzoic Acid	65-85-0			
40	Benzyl Alcohol	100-51-6			
41	Benzyl Chloride	100-44-7	2.9E+01	7.5E+00	2.1E-02
42	Beryllium	7440-41-7	6.0E-02	1.6E-02	4.2E-04
43	Bis(2-chloroethyl) Ether	111-44-4	4.0E+00	1.1E+00	2.9E-03
44	Bis(chloromethyl) Ether	542-88-1	2.2E-02	5.8E-03	1.6E-05
45	Bis(2-ethylhexyl) Phthalate	117-81-7	1.5E+02	4.0E+01	2.5E-01
46	Bismuth Oxide	1304-76-3	1.5E+02	4.0E+01	
47	Borates	-----	3.0E+01	7.9E+00	
48	Boron	7440-42-8	3.0E+01	7.9E+00	
49	Boron Nitride				
50	Boron Oxide	1303-86-2	1.5E+02	4.0E+01	
51	Boron Trichloride	10294-34-5			
52	Boron Triflouride	7637-07-2	9.0E+01	2.4E+01	
53	Bromodichloromethane	75-27-4	7.8E+01	2.1E+01	5.6E-02
54	Bromoform	75-25-2	1.5E+02	4.0E+01	9.0E-01
55	Bromomethane	74-83-9	5.0E+02	1.6E+02	

	Chemical Name	CAS#	1 Hour AAAQG µg/m^3	24 Hour AAAQG µg/m^3	Annual AAAQG µg/m^3
56	1,3-Butadiene	106-99-0	5.0E+00	1.3E+00	3.6E-03
57	Butanal	123-72-8			
58	n-Butanol	71-36-3	4.5E+03	1.2E+03	
59	2-Butoxyethanol	111-76-2	3.6E+03	9.5E+02	
60	1-Butyl Acetate	123-86-4	7.9E+03	5.6E+03	
61	n-Butyric Acid	107-92-6	3.0E+02	7.9E+01	
62	Butyrolacetone	96-48-0			
63	Cadmium	7440-43-9	7.7E-01	2.0E-01	5.6E-04
64	Calcium Carbonate (Total Dust)	1317-65-3	3.0E+02	7.9E+01	
65	Calcium Carbonate (Respirable Fraction)	1317-65-3	1.5E+02	4.0E+01	
66	Calcium Fluoride	7789-74-5	7.5E+01	2.0E+01	
67	Calcium Nitrate	10124-37-5			
68	Calcium Oxide	1305-78-3	6.0E+01	1.6E+01	
69	Caprolactam - Dust	105-60-2	2.5E+01	7.9E+00	
70	Caprolactam - Vapor	105-60-2	3.0E+01	7.9E+00	
71	Captan	133-06-2	1.3E+02	4.0E+01	1.0E+00
72	Carbon Black	13333-86-4	1.1E+02	2.8E+01	
73	Carbon Disulfide	75-15-0	9.0E+01	2.4E+01	
74	Carbon Monoxide	630-08-0	1.2E+03	3.1E+02	
75	Carbon Monoxide - 2	630-08-0			
76	Carbon Tetrachloride	56-23-5	9.2E+01	2.4E+01	6.6E-02
77	Carbonyl Fluoride	353-50-4	1.3E+02	4.0E+01	
78	Carbonyl Sulfide	463-58-1	1.3E+02	4.0E+01	
79	Cellulose Nitrate (Total Dust)	9004-70-0			
80	Cellulose Nitrate (Respirable Fraction)	9004-70-0			
81	Cellulose Tetranitrate	9004-70-0			
82	Chlorine	7782-50-5	2.5E+01	1.2E+01	
83	Chlorobenzene	108-90-7	1.1E+04	2.8E+03	
84	2-Chloro-1,3-butadiene	9010-98-4			
85	Chlordane	57-74-9	3.7E+00	9.8E-01	2.7E-03

	Chemical Name	CAS#	1 Hour AAAQG µg/m^3	24 Hour AAAQG µg/m^3	Annual AAAQG µg/m^3
86	Chloroform	67-66-3	6.0E+01	1.6E+01	4.3E-02
87	Chloromethane	74-87-3	7.7E+02	2.0E+02	5.6E-01
88	Chloromethyl Methyl Ether	107-30-2			
89	3-Chloropropene	107-05-1			
90	Chlorothalonil	1897-45-6			3.2E-01
91	Chromic Oxide	1333-82-0	1.5E+01	4.0E+00	
92	Chromium	7440-47-3	1.5E+01	4.0E+00	
93	Chromium VI	7440-47-3	1.7E-02	4.4E-03	1.2E-05
94	Cinnamaldehyde	104-55-2			
95	Cobalt Nitrate	10141-47-3			
96	Copper (fume)	7440-50-8	3.0E+00	7.9E-01	
97	Cuprous Chloride	7758-89-6	3.0E+01	7.9E+00	
98	Cuprous Oxide	1317-39-1	3.0E+01	7.9E+00	
99	Cote	-----			
100	Cresols	1319-77-3	6.6E+02	1.7E+02	
101	Cupric Chloride	1344-67-8			
102	Cupric Oxide	1317-38-0			
103	Diacetone Alcohol	123-42-2	7.2E+03	1.9E+03	
104	DDT (Dichlorodiphenyltrichloroethane)	50-29-3	1.4E+01	3.8E+00	1.0E-02
105	DDD	72-54-8	2.0E+01	5.3E+00	1.5E-02
106	DDE	72-55-9	1.4E+01	3.8E+00	1.0E-02
107	Diazinon	333-41-5	2.5E+00	7.9E-01	
108	Dibenzo(a,h)athracene	53-70-3	6.7E-01	1.8E-01	4.8E-04
109	Diborane	19287-45-7	3.0E+00	7.9E-01	
110	Dibromochloromethane	124-48-1	5.8E+01	1.5E+01	4.2E-02
111	1,2-Dibromo-3-chloropropane	96-12-8	3.0E-01	7.9E-02	7.9E-02
112	1,2-Dibromoethane	75-34-3	6.3E+00	1.7E+00	4.5E-03
113	1,2-Dichlorobenzene	95-50-1	9.0E+03	2.4E+03	
114	1,4-Dichlorobenzene	106-46-7	2.0E+02	5.3E+01	1.5E-01
115	Dichlorodifluoromethane	75-71-8	5.0E+04	3.9E+04	

	Chemical Name	CAS#	1 Hour AAAQG µg/m^3	24 Hour AAAQG µg/m^3	Annual AAAQG µg/m^3
116	1,1-Dichloroethane	75-34-3	8.4E+03	3.2E+03	
117	1,2-Dichloroethane	107-06-2	5.3E+01	1.4E+01	3.8E-02
118	1,1-Dichloroethene	75-35-4	1.3E+02	6.3E+01	
119	1,2-Dichloroethene	156-59-2	8.3E+03	6.3E+03	
120	Dichloromethane	75-09-2	3.0E+03	8.0E+02	2.2E+00
121	1,2-Dichloropropane	78-87-5	7.1E+01	1.9E+01	5.1E-02
122	2,4-Dichlorophenol	120-83-2			
123	Dichlorosilane	4109-96-0			
124	Dicofol	115-32-2	1.1E+01	2.9E+00	8.0E-03
125	Dieldrin	60-57-1	3.0E-01	8.0E-02	2.2E-04
126	Diethylene Glycol Monobutyl Ether (Butyl Carbitol)	112-34-5	4.8E+02	1.3E+02	
127	Diethylene Glycol Monobutylether Acetate	124-17-4	4.8E+02	1.3E+02	
128	Diethylene Triamine	111-40-0	8.3E+01	3.2E+01	
129	Diethyl Phthalate	84-66-2	8.3E+01	4.0E+01	
130	Diethyl Telluride	627-54-3			
131	Diethylstilbestrol	56-53-1			
132	Dimethoate	60-51-5	1.5E+01	4.0E+00	
133	2,5-Dimethyl Furan	625-86-5			
134	Dimethyl Disulfide	624-92-0			
135	Dimethylnitrosoamine	62-75-9			
136	Dimethyl Sulfate	77-78-1	1.5E+01	4.0E+00	
137	Dimethyl Sulfide	75-18-3	1.5E+03	4.0E+02	
138	Di-n-butyl Phthalate	84-74-2	8.3E+01	4.0E+01	
139	Di-n-Octyl Phthalate	117-84-0	8.3E+01	4.0E+01	
140	2,4-Dinitrophenol	51-28-5	1.5E+00	4.0E-01	
141	2,4-Dinitrotoluene	121-14-2	4.2E+01	1.2E+01	
142	1,4-Dioxane	123-91-1	2.7E+03	7.1E+02	
143	Diphenylamine	122-39-4	1.7E+02	7.9E+01	
144	1,2-Diphenylhydrazine	122-66-7	6.3E+00	1.7E+00	4.5E-03
145	N,N-Dipropyl-4-Triflouromethyl-2,6-Dinitroaniline	1582-09-8			

	Chemical Name	CAS#	1 Hour AAAQG µg/m^3	24 Hour AAAQG µg/m^3	Annual AAAQG µg/m^3
146	Dithane	8018-01-7			
147	Endosulfan	115-25-7	2.5E+00	7.9E-01	
148	Endrin	72-20-8	2.5E+00	7.9E-01	
149	Epichlorohydrin	106-89-8	1.7E+02	6.3E+01	8.3E-01
150	Ethanol	64-17-5	5.7E+04	1.5E+04	
151	2-Ethoxy Ethyl Acetate	111-15-9	8.1E+02	2.1E+02	
152	Ethyl Acetate	141-78-6	4.2E+04	1.1E+04	
153	Ethylbenzene	100-41-4	4.5E+03	3.5E+03	
154	Ethylene Glycol Dimethyl Ether	110-71-4			
155	Ethylene Glycol Monopropyl Ether	2807-30-9			
156	Ethyl-3-Ethoxy Propionate	763-69-9			
157	Ethylene Oxide	75-21-8	1.4E+01	3.6E+00	1.0E-02
158	Ethyl Parathion	56-38-2			
159	Fiberglass		1.5E+02	4.0E+01	
160	Fiberglass - 2				
161	Fluorine	7782-41-4	6.0E+00	1.6E+00	
162	Formaldehyde	50-00-0	2.5E+01	1.6E+01	7.6E-02
163	Formic Acid	64-18-6	1.5E+02	7.1E+01	
164	Glycerol - Total Dust	56-81-5	3.0E+02	7.9E+01	
165	Glycerol - Respirable fraction	56-81-5	1.5E+02	4.0E+01	
166	Glycol Monobutylether Acetate	112-07-2			
167	Heptachlor	76-44-8	1.1E+00	2.8E-01	7.6E-04
168	Heptachlor Epoxide	1024-57-3	5.3E-01	1.4E-01	3.8E-04
169	2-Heptanone	110-43-0	7.1E+03	1.9E+03	
170	Heptane	142-82-5	1.7E+04	1.6E+04	
171	Hexachlorobenzene	118-74-1	3.0E+00	8.0E-01	2.2E-03
172	Hexachlorobutadiene	87-68-3	7.2E+00	1.9E+00	4.5E-02
173	a-Hexachlorocyclohexane	319-84-6	7.7E-01	2.0E-01	5.6E-04
174	b-Hexachlorocyclohexane	319-85-7	2.7E+00	7.1E-01	1.9E-03
175	g-Hexachlorocyclohexane (lindane)	58-89-9	3.7E+00	9.8E-01	2.7E-03

	Chemical Name	CAS#	1 Hour AAAQG µg/m^3	24 Hour AAAQG µg/m^3	Annual AAAQG µg/m^3
176	Hexachlorocyclohexane, Tech	608-73-1	2.7E+00	7.1E-01	1.9E-03
177	Hexachlorocyclopentadiene	77-47-4	3.0E+00	7.9E-01	
178	Hexachloroethane	67-72-1	3.0E+02	7.9E+01	2.5E-01
179	n-Hexane	110-54-3	5.4E+03	1.4E+03	
180	Hydrofluoric Acid	7664-39-3	4.2E+01	2.0E+01	
181	Hydrogen Chloride	7647-01-0	2.1E+02	5.6E+01	
182	Hydrogen Cyanide	74-90-8	1.0E+02	4.0E+01	
183	Hydrogen Sulfide	7783-06-4	1.8E+02	1.1E+02	
184	1-Hydroxy-2-Propanone (Acetol)	116-09-6			
185	Iron	7439-89-6			
186	Iron (Soluble Compounds)	-----	1.7E+01	7.9E+00	
187	Iron (Insoluble Compounds)	-----	1.5E+02	4.0E+01	
188	Iron (II) Chloride	7758-94-3			
189	Iron (III) Chloride	7705-08-0			
190	Iron (III) Oxide	1309-37-1	1.5E+02	4.0E+01	
191	Iron (II,III) Oxide	1317-61-9	1.5E+02	4.0E+01	
192	Isobutyl Acetate	110-19-0	2.1E+04	5.6E+03	
193	Isobutyl Alcohol	78-83-1	4.5E+03	1.2E+03	
194	Isobutyl Isobutyrate	97-85-8			
195	Isopropanol	67-63-0	1.0E+04	7.8E+03	
196	Isopropyl Acetate	108-21-4	9.8E+03	7.5E+03	
197	Lacquer Thinner	-----			
198	Lactol Spirits	64742-89-8			
199	Lead	7439-92-1	NAAQS	NAAQS	
200	Lead (II) Oxide	1317-36-8	NAAQS	NAAQS	
201	Lead (III) Oxide		NAAQS	NAAQS	
202	Lead Oxide	1314-41-6	NAAQS	NAAQS	
203	Light Aromatic Solvent Naptha	64742-95-6	1.2E+04	3.2E+03	
204	Magnesium	7439-95-4			
205	Magnesium Chloride				

	Chemical Name	CAS#	1 Hour AAAQG µg/m^3	24 Hour AAAQG µg/m^3	Annual AAAQG µg/m^3
206	Magnesium Fluoride	7783-40-6	7.5E+01	2.0E+01	
207	Magnesium Nitride				
208	Magnesium Oxide (Total Dust)	1309-48-4	3.0E+02	7.9E+01	
209	Magnesium Oxide (Respirable Fraction)	1309-48-4	1.5E+02	4.0E+01	
210	Magnesium Silicate	1343-90-4			
211	Manganese (metal or fume)	7439-96-5	2.5E+01	7.9E+00	
212	Manganese Dioxide	1313-13-9	2.5E+01	7.9E+00	
213	Malathion	121-75-5	1.5E+02	4.0E+01	
214	Mercury	7439-97-6	1.5E+00	4.0E-01	
215	Metalaxyl	57837-19-1			
216	Methanol	67-56-1	2.6E+03	2.1E+03	
217	Methomyl	16752-77-5	7.5E+01	2.0E+01	
218	Methoxychlor	72-43-5	3.0E+02	7.9E+01	
219	1-Methoxy-2-Propanol Acetate	108-65-5			
220	a-Methylacrolein	78-85-3			
221	Methyl Bromide	74-83-9	5.0E+02	1.6E+02	
222	3-Methylcholanthrene	56-49-5			
223	Methyl Cyclopropyl Ketone	765-43-5			
224	Methyl Ethyl Ketone	78-93-3	7.4E+03	4.7E+03	
225	4,4-Methylene-bis-2-chloroanaline	101-14-4	6.6E+00	1.7E+00	2.7E-02
226	Methylhydrazine	60-34-4	4.4E+00	1.2E+00	3.2E-03
227	Methyl Isocyanate	624-83-9	1.5E+00	4.0E-01	
228	Methyl Mercaptan	74-93-4	3.0E+01	7.9E+00	
229	2-Methylnaphthalene	91-57-6			
230	Methyl N-Butyl Ketone	591-78-6	6.0E+02	1.6E+02	
231	Methyl Parathion	298-00-0	5.0E+00	1.6E+00	
232	4-Methyl-2-Pentanone (Hexanone, MIBK)	108-10-1			
233	2-Methyl-2-Propen-1-ol	513-42-8			
234	a-Methylstyrene	98-83-9	4.0E+03	1.9E+03	
235	Methyl Vinyl Ketone	79-84-4			

	Chemical Name	CAS#	1 Hour AAAQG µg/m^3	24 Hour AAAQG µg/m^3	Annual AAAQG µg/m^3
236	Mineral Spirits	8032-32-4	1.2E+04	3.2E+03	
237	Mixed Alcohol Phthalates	-----			
238	Mixed Paraffins (alkanes)	-----	5.0E+01	1.6E+01	
239	Monoammonium Phosphate				
240	Molybdenum Trioxide	1313-27-5	8.3E+01	4.0E+01	
241	Myclobutanil (Systhane)	88671-89-0			
242	Naphthalene	91-20-3	6.3E+02	4.0E+02	
243					
244	Nickel (metal or fume)	7440-02-0	4.5E-01	1.2E-01	2.1E-03
245	Nickel Acetate	373-02-4	3.0E+00	7.9E-01	
246	Nitric Acid	7697-37-2	8.3E+01	4.0E+01	
247	Nitrobenzene	98-95-3	8.3E+01	4.0E+01	
248	Nitrogen Dioxide	10102-44-0	NAAQS	NAAQS	
249	Nitrogen Oxide	10102-43-9	3.8E+02	2.4E+02	
250	2-Nitropropane	79-46-9	1.1E+03	2.8E+02	No data
251	N-Nitrosodiethylamine	55-18-5	3.2E-02	8.5E-03	2.3E-05
252	N-Nitrosodimethylamine	62-75-9	9.9E-02	2.6E-02	7.1E-05
253	N-Nitrosopyrrolidine	930-55-2	2.3E+00	6.1E-01	1.7E-03
254	N-Nitroso-di-n-butylamine	924-16-3	2.3E+00	6.1E-01	1.7E-03
255	Octane	111-65-9	1.5E+04	1.2E+04	
256	Oxoheptyl Acetate	90438-79-2			
257	Oxohexyl Acetate				
258	Ozone	10028-15-6	NAAQS	NAAQS	
259	Particulate Matter (PM10)	-----	NAAQS	NAAQS	
260	Pentachlorobenzene	608-93-5			
261	Pentachloronitrobenzene	82-68-8	1.5E+01	4.0E+00	1.3E-02
262	Pentachlorophenol	87-86-5	1.3E+01	4.0E+00	2.9E-02
263	Pentanal	110-62-3	5.3E+03	1.4E+03	
264	Pantane	109-66-8	1.9E+04	1.4E+04	
265	2-Pentanone	107-87-9	7.3E+03	5.6E+03	

	Chemical Name	CAS#	1 Hour AAAQG µg/m^3	24 Hour AAAQG µg/m^3	Annual AAAQG µg/m^3
266	Phenol	108-95-2	3.2E+02	1.5E+02	
267	p-Phenylenediamine	106-50-3	3.0E+00	7.9E-01	
268	Phenylmercuric Acetate	62-38-4	1.3E+00	4.0E-01	
269	Phosgene	75-44-5	1.2E+01	3.2E+00	
270	Phosmet	732-11-6	9.0E+00	2.4E+00	
271	Phosphamidon	13171-21-6			
272	Phosphine	7803-51-2	1.1E+01	3.2E+00	
273	Phosphoric Acid	7664-38-2	2.5E+01	7.9E+00	
274	Phosphorous Nitride				
275	Phosphorous Pentafluoride	7647-19-0	7.5E+01	2.0E+01	
276	Phosphorous Pentoxide	1314-56-3	2.5E+01	7.9E+00	
277	Phosphorous Pentasulfide		2.5E+01	7.9E+00	
278	a-Pinene (2-Pinene)	80-56-8			
279	b-Pinene	127-91-3			
280	Polyacrylamide				
281	Polychlorinatedbiphenyls (PCBs)	1336-36-3	6.3E-01	1.7E-01	4.5E-04
282	Potassium				
283	Potassium Borate	See Borates	3.0E+01	7.9E+00	
284	Potassium Carbonate	584-08-7			
285	Potassium Chloride	7447-40-7			
286	Potassium Fluoride	7789-23-3	7.5E+01	2.0E+01	
287	Potassium Hydroxide	1310-58-3	1.7E+01	1.6E+01	
288	Potassium Oxide				
289	Potassium Sulfate	7778-80-5			
290	Propanal	123-38-6			
291	Propane (asphyxiant)	74-98-6	5.4E+04	1.4E+04	
292	n-Propanol	71-23-8	5.2E+03	3.9E+03	
293	Pronamide	23950-58-5		No data	
294	Propionic Acid	79-09-6	3.8E+02	2.4E+02	
295	n-Propyl Acetate	109-60-4	8.8E+03	6.7E+03	

	Chemical Name	CAS#	1 Hour AAAQG µg/m^3	24 Hour AAAQG µg/m^3	Annual AAAQG µg/m^3
296	Propylene Glycol Monomethyl Ether	107-98-2	4.5E+03	2.9E+03	
297	Propylene Oxide	75-56-9	3.7E+02	9.8E+01	2.7E-01
298	Pyridine	110-86-1	2.5E+02	1.2E+02	
299	Reserpine	50-55-5			
300	Selenium	7782-49-2	6.0E+00	1.6E+00	
301	Selenourea	630-10-4			
302	Sevin Bait (Carbaryl)	63-25-2	8.3E+01	4.0E+01	
303	Silane	7803-62-5	8.3E+00	5.6E+00	
304	Silica (Amorphous Hydrated)	7631-86-9	1.8E+02	4.8E+01	
305	Silver	7440-22-4	3.0E-01	7.9E-02	
306	Sodium Aluminofluoride	15096-52-3	6.0E+01	1.6E+01	
307	Sodium Carbonate	497-19-8			
308	Sodium Chloride	7647-14-5			
309	Sodium Dichromate (VI)	10588-01-9	1.5E+00	4.0E-01	
310	Sodium Fluoride	7681-49-4	7.5E+01	2.0E+01	
311	Sodium Hydroxide	1310-73-2	1.7E+01	1.6E+01	
312	Sodium Oxide				
313	Sodium Sulfate	7757-82-6			
314	Strychnine	57-24-9	3.8E+00	1.2E+00	
315	Styrene (includes dimers)	100-42-5	3.5E+03	1.7E+03	
316	Sulfur				
317	Sulfur Dioxide	7446-09-5	NAAQS	NAAQS	
318	Sulfur Trioxide	7446-11-9			
319	Sulfuric Acid	7446-93-9	2.5E+01	7.9E+00	
320	Talc	14807-96-6	6.0E+01	1.6E+01	
321	1,2,4,5-Tetrachlorobenzene	95-94-3			
322	2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6	3.2E-05	8.5E-06	2.3E-08
323	1,1,2,2-Tetrachloroethane	79-39-5	2.4E+01	6.4E+00	1.8E-02
324	Tetrachloroethene	127-18-4	1.3E+03	6.4E+02	1.7E+00
325	2,3,4,6-Tetrachlorophenol (2,4,5,6)	58-90-2			

	Chemical Name	CAS#	1 Hour AAAQG µg/m^3	24 Hour AAAQG µg/m^3	Annual AAAQG µg/m^3
326	Tetraethyl Lead	78-00-2	2.3E+00	6.0E-01	
327	Tetrafluoromethane	75-73-0			
328	Tetrahydrofuran	109-99-9	6.1E+03	4.7E+03	
329	Thallium	7440-28-0	3.0E+00	7.9E-01	
330	Thiourea	62-56-6			
331	Thorium 232	7440-29-1			
332	Titanium Dioxide (Total Dust)	13463-67-7	3.0E+02	7.9E+01	
333	Titanium Dioxide (Respirable Dust)	13463-67-7	1.5E+02	4.0E+01	
334	Toluene	101-88-3	4.4E+03	3.0E+03	
335	2,4-Toluene Diisocyanate	584-84-9	1.2E+00	3.2E-01	
336	Toxaphene	8001-35-2	4.4E+00	1.2E+00	3.2E-03
337	1,2,4-Trichlorobenzene	120-82-1	3.3E+02	3.2E+02	
338	1,1,1-Trichloroethane	71-55-6	5.7E+04	1.5E+04	
339	1,1,2-Trichloroethane	79-00-5	8.7E+01	2.3E+01	6.2E-02
340	Trichloroethene	79-01-6	8.1E+02	2.1E+02	5.8E-01
341	Trichloroflouromethane	75-69-4	5.8E+04	4.4E+04	
342	2,4,5-Trichlorophenol	95-95-4	1.3E+01	4.0E+00	
343	2,4,6-Trichlorophenol	88-06-2	1.3E+01	4.0E+00	3.2E-01
344	1,1,2-Trichloro-1,2,2-Triflouroethane	76-13-1	7.9E+04	6.0E+04	
345	Triethylenetetramine	112-24-3			
346	1,2,4-Trimethylbenzene	95-63-6	1.4E+03	9.9E+02	
347	1,3,5-Trimethylbenzene	108-67-8	1.4E+03	9.9E+02	
348	2,2,4-Trimethyl-1,3pentanediol Isobutyrate (Texanol)	25265-77-4			
349	Tungsten Trioxide	1314-35-8	8.3E+01	4.0E+01	
350	Turpentine	8006-64-2	7.0E+03	4.4E+03	
351	Uranium 238 (Soluble)	7440-61-1	1.5E+00	4.0E-01	
352	Uranium 238 (Insoluble)	7440-61-1	6.0E+00	1.6E+00	
353	Urea	57-13-6			
354	Vanadium	7440-62-2	1.5E+00	4.0E-01	

	Chemical Name	CAS#	1 Hour AAAQG µg/m^3	24 Hour AAAQG µg/m^3	Annual AAAQG µg/m^3
355	Vinyl Chloride	75-01-4	1.6E+01	4.3E+00	1.2E-02
356	VM & P Naptha (Benzin)	8030-30-6	4.1E+04	1.1E+04	
357	Xylenes,Mixed	1330-20-7	5.4E+03	3.5E+03	
358	Zinc Chloride	7646-85-7	1.7E+01	7.9E+00	
359	Zinc Oxide Fume	1314-13-2	8.3E+01	4.0E+01	
360	Zinc Oxide Respirable Dust	1314-13-2	1.5E+02	4.0E+01	
361	Zinc Oxide Total Dust	1314-13-2	3.0E+02	7.9E+01	
362	Zinc Stearate - Total Dust	557-05-1	3.0E+02	7.9E+01	
363	Zinc Stearate - Respirable Fraction	557-05-1	1.5E+02	4.0E+01	
364	Zirconium	7440-67-7	8.3E+01	4.0E+01	
365	Zirconium Carbide	7440-67-7	8.3E+01	4.0E+01	
366	Zirconium Oxide	1314-23-4	8.3E+01	4.0E+01	